

### ABSTRACT

[049] A vertical take off and land (VTOL) jet aircraft may have a jet engine mounted in a forward portion of the aircraft. A thrust deflection assembly may be provided rearward of the jet engine, and include a cascade and control box for deflecting thrust during vertical flight of the aircraft. By manipulating the cascade and control box, the roll, yaw and pitch of the aircraft during vertical flight may be controlled. In addition, ailerons, a rudder and elevators may be provided for controlling roll, yaw and pitch during forward flight. A pilot control input apparatus is also provided, which receives pilot input regarding desired roll, yaw and pitch of the aircraft. The pilot control input is operatively associated with a control mixer, which controls the control box, ailerons, rudder and elevators in accordance with the desired roll, yaw and pitch of the aircraft. As a result, the pilot uses the same control input apparatus for vertical and forward flight.